



# Shree H. N. Shukla College of Science Rajkot

## B.Sc. (Sem. II) (CBCS)

### [BC-201]: CELL BIOLOGY

### Biochemistry Question Bank

#### Unit 1

1. Define Cell.
2. History of Cell Biology.
3. Mention different levels of organizations in biology.
4. Define Prokaryotic cell (in detail with diagram).
5. Define Eukaryotic cell (in detail with diagram).
6. Describe the diversity of Eukaryotic cells.
7. Detailed note on Plant cells (with diagram).
8. Detailed note Animal cells (with diagram).
9. Short introduction of Virus with example and viral components.
10. Short note on Viroid with example.
11. What are Prions?
12. What is Cytoskeleton?
13. Component of Cytoskeleton.
14. Function of Cytoskeleton.

#### Unit 2

1. Detailed note on Cell wall.
2. Write about different types of cell walls with its composition.
3. Detailed structure of Plasma membrane (with diagram).
4. What is cytoplasm and its composition.
5. Detailed structure of Mitochondria (with diagram).
6. Explain Endosymbiotic theory.
7. Write all proofs supporting endosymbiotic theory.
8. What is maternal origin of mitochondria? (Explain in detail)
9. What is Homogenization?
10. Write different methods used for homogenization.
11. How cell organelles can be separated? (in detailed)
12. What are marker enzymes?

### **Unit 3**

1. Write in detail about Eukaryotic cell cycle.
2. What are the checkpoints in cell cycle?
3. Explain any one checkpoint in detail with diagram.
4. What is mitosis?
5. Explain all stages of mitosis in detail with diagram.
6. Significance of mitosis.
7. What is meiosis?
8. Explain all stages of meiosis in detail with diagram.
9. Significance of meiosis.
10. Types of cell death.
11. Write about apoptosis.
12. Write intrinsic pathway of apoptosis.
13. Write extrinsic pathway of apoptosis.
14. What is necrosis?
15. Write factors which can cause necrosis.

### **Unit -4**

1. What is cell cell interaction?
2. What is cell matrix interaction?
3. Explain extracellular matrix.
4. Write down components of ECM.
5. Write note on collagen.
6. Write note on non-collagen components?
7. Explain tight junction.
8. Explain gap junction.
9. Explain desmosome and hemidesmosome.
10. What is plasmodesmata?
11. Explain cell wall.
12. Explain primary and secondary cell wall.
13. Explain extracellular matrix in detail.
14. What is cell junction? Explain types of cell junction.

### **Unit 5**

1. What is cell membrane?
2. Give a brief diagram of cell membrane.
3. Explain sanger and Nicholson model of plasma membrane.
4. What is the composition of plasma membrane.
5. Explain lateral and flipflop movement.
6. Explain FRAP experiment.

7. What is simple diffusion.
8. What is facilitated diffusion.
9. What is active transport.
10. What is ionophores.
11. Explain sodium potassium pump.